



Redo Banding After Band Erosion

Advantages of the MiniMizer Extra Band

Conclusion

Approximately 67% of the patients suffering from erosion have sought revisional surgery. The choice of redo procedures for patients that have failed laparoscopic adjustable banding is difficult.

The anatomy has been distorted by the erosion, the gastric wall is scarred and thickened and there are inflammatory adhesions. Choices for revisional surgery include conversion to lap Roux en Y gastric bypass, BPD or redo laparoscopic banding. Anatomical distortion and scarring make for difficulties with inserting a new band and a large circumference band is often required, but it has been my policy to offer redo banding to patients who have had good results with the initial banding procedure. Those who have been re-banded have undergone safe replacement of their bands laparoscopically safely 3-18 months after removal of their eroded bands. On average they have exhibited successful further weight reduction following replacement reducing their BMIs by an average of 5 points on follow up. However 2 patients (5.8%) have suffered a second erosion (one SAGB & one LapBand) and the incidence of this complication may rise in time.

The looped **MiniMizer Extra** band offers advantages as a replacement band.

- **No gastric wrap is needed as the band is sutured direct to the gastric wall.**
- **The band has a large 10.5 cm circumference enabling it to be closed around a thickened scarred stomach and a dual closure system allowing for the selection of the appropriate band circumference.**
- **On short term follow up no **MiniMizer Extra** bands have eroded.**



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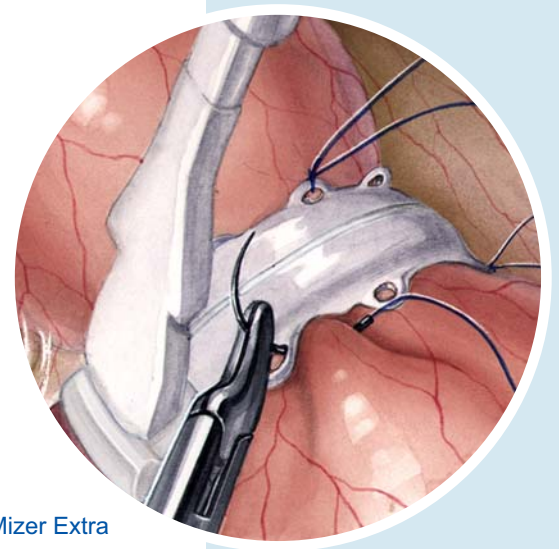
Introduction

Band erosion is one of the most significant and upsetting complications of laparoscopic gastric banding resulting in failure of the procedure and usually weight regain. The incidence is quoted at between 0.5% and 15% (1, 2). It may be higher than recognised as all patients are not routinely endoscoped. The aetiology is poorly understood. Possible causes include:

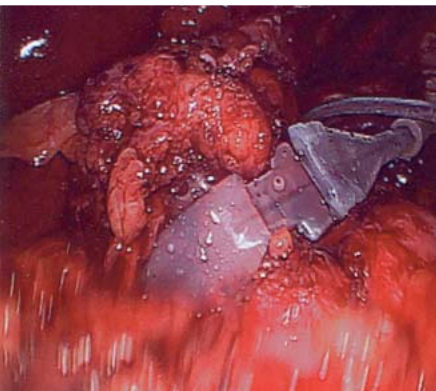
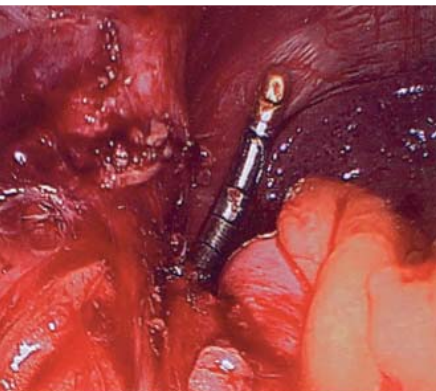
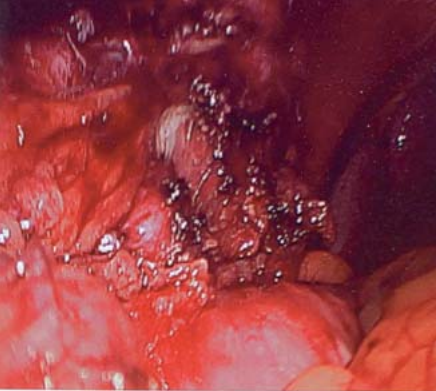
- Damage to the gastric wall during band insertion (3, 7).
- Low grade infection possibly introduced at band adjustment or use of non-absorbable suture which penetrate into the gastric lumen when performing the wrap (4).
- Pressure from the band on the gastric wall due to over-inflation, possibly due to over filling in response to failure to lose weight secondary to ingestion of liquid sources of kilojoules i.e. chocolate or ice-cream (5, 6).
- Auto inflation secondary to the use of radio-opaque dye in the band causing excessive pressure on the gastric wall (1, 5, 6).

Other possible causes include:

- Patient behaviour i.e. eating excessive volumes and a bulimic eating pattern.
- Taking NSAIDs or other gastric irritants.
- An initially tight gastric wrap with pressure increasing as the band is inflated.
- Band design i.e. bands whose membrane kinks into deep folds trapping the gastric wall and producing ischaemia.



MiniMizer Extra



MiniMizer Extra placed around a fibrotic oedematous stomach

Aim

To assess whether replacement of an eroded band by another band is an effective bariatric procedure and if the **MiniMizer Extra** offers advantages over other devices as a replacement band. The incidence of band erosion leading to technical failure is reported. The technical aspects and safety of the replacement procedure and the effectiveness of the replacement band as a weight control device were examined. The outcomes of patients who have had eroded bands replaced by a **MiniMizer Extra** band are presented and its advantages in this device are discussed.

Methods

The files of all patients who had suffered a band erosion were accessed for retrospective analysis. Patients who had undergone redo banding were segregated and examined for any complications that occurred at the time of revisional surgery and their outcomes as regards effectiveness of the new band as a weight control device were assessed.

Clinical Experience

In a series of 1326 insertions of laparoscopic gastric bands between 1994 and 2009 **81 (6.22%) patients** suffered the complication of band erosion.

The series is comprised of 425 Swedish bands and 901 Lap Bands. The series commenced in 1994. 196 Lap bands were inserted by the perigastric technique between then and December 1998 when the Lap band was abandoned in favour of the SAGB because of the slippage problem associated with peri-gastric placement. The use of the Lap band was reinstated in 2002 when the SAGB became temporarily unavailable.

At about this time it became apparent that a high erosion rate was developing with the SAGB 13.1% of the inserted SAGB bands have had to be removed for this complication despite avoiding excessive inflation.

6 of the SAGB erosions were associated with frank sepsis and one with a large abscess between liver and stomach. Strep Milleri was the usual pathogen associated with sepsis. In 2 cases there was free perforation and low grade peritonitis. **1.88%** SAGBs have also failed due to cracking. The SAGB was abandoned in 2005. To date the Lap Band has demonstrated a 2.7% erosion rate.

Of the **57 patients** undergoing removal of eroding bands **38** have sought further bariatric surgery because of weight regain. All 34 post band erosion patients have undergone laparoscopic band replacement (**14 MiniMizer Extra bands**). 2 have been converted to Fobi pouch gastric bypass, one to sleeve gastrectomy and two to BPD.

Discussion

Replacing a band after a previous band erosion can be challenging. The surgery should be delayed for a minimum of 3 months after removal of the first band to allow for healing of the gastric wall and settling of hyperaemia and oedema. The particular problems faced at surgery are

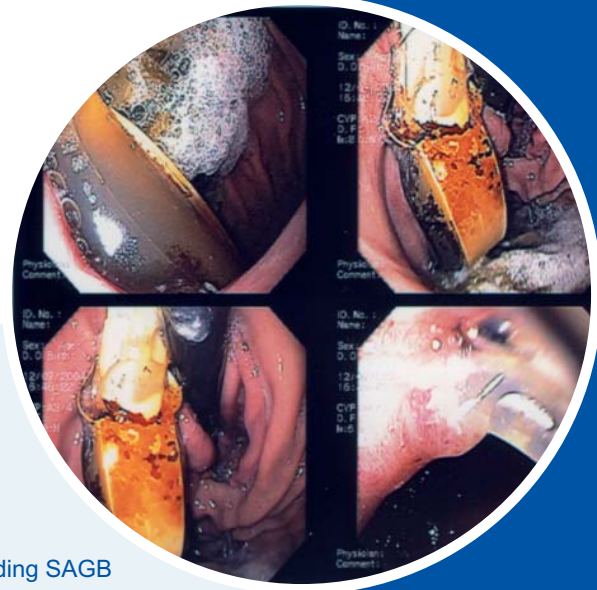
- Adhesions between stomach and liver will need to be divided.
- There is often dense fibrosis around the left crus and in the retrogastric tissues making for difficult dissection and increasing risk of gastric perforation. This is the most difficult area in the replacement procedure.
- The stomach wall and lesser omentum are thickened increasing the bulk of tissue beneath the new band. The stomach is often wrapped in omentum which has to be separated. These factors make a large circumference band necessary.
- The stomach wall at the site of the previous erosion is scarred and rigid and is difficult to wrap over the band so as to secure it in position.

The **MiniMizer Extra** band offers significant advantages in this situation and has been used in this situation since:

- It can be sutured to the gastric wall by its loops to secure fixation thus avoiding the need for wrapping the band.
- The band has a large 10.5cm circumference so as to fit around the thickened rigid tissues and has a two position closure (9.75cm &10.5cm) allowing the surgeon a choice of two circumferences in placing the band.
- It has a choice of port sizes.

Technical points

- The band is stiff to close and closure is facilitated by using the specially designed band closure tool. Where possible it should be closed to the 9.75 cm diameter as this minimises adjustments.
- A firm calibrating tube than should be used to prevent excessive tightening. Reopening is challenging.
- PDS seems a satisfactory suture material for suturing as by the time it has absorbed tissue has grown through the loops effectively fixing the band to the gastric wall.

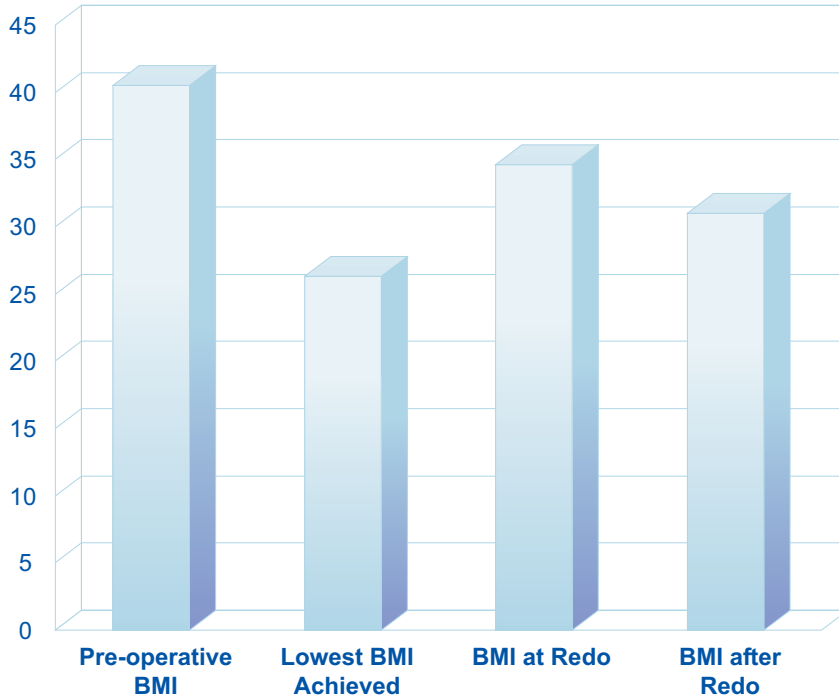


Eroding SAGB

Results

- 34 patients, 14 using the **MiniMizer Extra** band, underwent uncomplicated safe laparoscopic band re-insertion. Patients are between 5 months and 5 years postoperative. The **MiniMizer Extra** bands have only been used since Jan 2008 so follow up is short but the trend established does indicate that patients will lose weight with their new bands (see graph).
- Patients more than 1 year post insertion have averaged a further loss of 5 BMI points.
- No patients have re-eroded their bands using the **MiniMizer Extra** band. One of each Lap and Swedish replacement bands have re-eroded. One patient has a leaking **MiniMizer Extra** band possibly due to the force required to close it around the thickened scarred tissue.

Weight loss resumption after insertion of a **MiniMizer Extra** band



References

1. Ezio Lattuada et al Band Erosion following gastric banding: How to Treat It, Obesity Surgery Vol 17, no 3, March 2007, 329-333
2. Agnetta Westling et al: Silicone Adjustable Gastric Banding: Disappointing Results Obesity Surgery Vol 8 No 4 467- 474
3. Biagini J: Intra-gastric Band Erosion, correspondence, Obesity Surgery 2001; 11:100
4. Abu-Abaid et al: The clinical spectrum of band erosion following laparoscopic adjustable silicone gastric banding for morbid obesity. Surg Endoscopy 2003; 17:861-3
5. Ezio Lattuada et al Band Erosion following gastric banding: How to Treat It, Obesity Surgery Vol 17, no 3, March 2007, 329-333
6. Nivellet E et al: Lap band erosion: incidence and treatment. Obesity Surgery 2001; 11: 744-7
7. Forsell P, et al: Complications following Swedish Adjustable Gastric Banding (SAGB) Obesity Surgery 1999; 9: 11-15
8. Ezio Lattuada et al: Histologic Study of Tissue Reaction to the Gastric Band: Does it Contribute to the Problem of Band Erosion? Obesity Surgery 2006 16, 1155-1159